

# Missouri Department of Natural Resources



## PUBLIC NOTICE

### DRAFT MISSOURI STATE OPERATING PERMIT

DATE: October 22, 2004

In accordance with the state Clean Water Law, Chapter 644, RSMo, Clean Water Commission regulation 10 CSR 20-6.010, and the federal Clean Water Act, the applicants listed herein have applied for authorization to either discharge to waters of the state or to operate a no-discharge wastewater treatment facility. The proposed permits for these operations are consistent with applicable water quality standards, effluent standards and/or treatment requirements or suitable timetables to meet these requirements (see 10 CSR 20-7.015 and 7.031). All permits will be issued for a period of five years, unless noted otherwise in the Public Notice for that discharge.

On the basis of preliminary staff review and the application of applicable standards and regulations, the Missouri Department of Natural Resources (MDNR), as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions. The proposed determinations are tentative pending public comment.

Persons wishing to comment on the proposed permit conditions are invited to submit them in writing to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102, ATTN: Peter Goode, Professional Engineer. Please include the permit number in all comment letters.

Comments should be confined to the issues relating to the proposed action and permit(s) and the effect on water quality. The MDNR may not consider as relevant comments or objections to a permit based on issues outside the authority of the Clean Water Commission, (see Curdt v. Mo. Clean Water Commission, 586 S.W.2d 58 Mo. App. 1979).

All comments must be postmarked by November 22, 2004 or received in our office by 5:00 p.m. on November 25, 2004. The requirement of a signed document makes it impossible to accept email comments for consideration at this time. Comments will be considered in the formulation of all final determinations regarding the applications. If response to this notice indicates significant public interest, a public meeting or hearing may be held after due notice for the purpose of receiving public comment on the proposed permit or determination. Public hearings and/or issuance of the permit will be conducted or processed according to 10 CSR 20-6.020.

Copies of all draft permits and other information including copies of applicable regulations are available for inspection and copying at DNR's website, <http://www.dnr.mo.gov/wpscd/wpcp/homewpcp.htm>, or at the Department of Natural Resources, Water Protection Program, 205 Jefferson Street, P.O. Box 176, Jefferson City, Missouri 65102, between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Public Notice Date: October 22, 2004

Permit Number: MO-0056260

Southwest Regional Office

<b>FACILITY NAME AND ADDRESS</b>	<b>NAME AND ADDRESS OF OWNER</b>
Ava Wastewater Treatment Facility, Farm Road 506, Ava, MO 65608	City of Ava, P.O. Box 967, Ava, MO 65608
<b>RECEIVING STREAM &amp; LEGAL DESCRIPTION</b>	<b>TYPE OF DISCHARGE</b>
Prairie Creek, Sec. 15, T26N, R16W, Douglas County	Domestic, reissue

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No.: MO-0056260

Owner: City of Ava  
Address: PO Box 967, Ava, MO 65608

Continuing Authority: Same as above  
Address: Same as above

Facility Name: Ava Wastewater Treatment Plant  
Address: Farm Road 506, Ava, MO 65608

Legal Description: SW ¼, NE ¼, Sec. 15, T26N, R16W, Douglas County  
Latitude/Longitude: +3656401/-09240361

Receiving Stream: Tributary to Prairie Creek (U)  
First Classified Stream and ID: Cowskin Creek (P)(02482)  
USGS Basin & Sub-watershed No.: (1101003-020002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

**FACILITY DESCRIPTION**

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

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Effective Date

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Stephen M. Mahfood, Director, Department of Natural Resources  
Executive Secretary, Clean Water Commission

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Expiration Date  
MO 780-0041 (10-93)

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Jim Hull, Director of Staff, Clean Water Commission

## FACILITY DESCRIPTION (continued)

### Interim Facilities

#### Outfall #001 - POTW - SIC #4952

Oxidation ditch/chlorination/sludge storage basin/sludge is land applied.

Design population equivalent is 3,600.

Design flow is 450,000 gallons per day.

Actual flow is 540,000 gallons per day.

Design sludge production is 58 dry tons/year.

Actual sludge production is 64.3 dry tons/year.

#### Outfall #002 - POTW - SIC #4952

Infiltration/Inflow retention basin.

Design flow is 1.0 MGD.

Actual flow is dependent on precipitation.

### New Facilities

#### Outfall #001 - POTW - SIC #4952

Aeration basins/clarifiers/tertiary filtration/constant ultraviolet disinfection/sludge is land applied.

Design population equivalent is 4,733.

Design flow is 0.7 MGD.

Actual flow is 0.4 MGD.

Design sludge production is 213 dry tons/year.

Actual sludge production is 70 dry tons/year.

#### Outfall #002 - POTW - SIC #4952

Stormwater diversion over 3.4 MGD/stormwater lagoon.

Design flow is 1.0 MGD.

Actual flow is dependent on rainfall.

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 3 of 8	
					PERMIT NUMBER MO-0056260	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until June 30, 2005. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/weekday**	24 hr. estimate
Biochemical Oxygen Demand <sub>5</sub> ***	mg/L		15	10	once/month	24 hr. composite
Total Suspended Solids***	mg/L		20	15	once/month	24 hr. composite
pH – Units	SU	****		****	once/month	grab
Fecal Coliform	#/100mL	1000		400	once/month	grab
Total Residual chlorine (Note 1)	mg/L	1.0		1.0	once/month	grab
<u>Outfall #002</u> (Note 2)						
Flow	MGD	*		*	once/day	*****
Biochemical Oxygen Demand <sub>5</sub>	mg/L		45		once/discharge event	grab
Total Suspended Solids	mg/L		45		once/discharge event	grab
pH - Units	SU	****		****	once/discharge event	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE _____. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 4 of 8	
					PERMIT NUMBER MO-0056260	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on July 1, 2005, and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/weekday**	24 hr. estimate
Biochemical Oxygen Demand <sub>5</sub> ***	mg/L		15	10	once/week	24 hr. composite
Total Suspended Solids***	mg/L		20	5	once/week	24 hr. composite
pH – Units		* **		* **	once/week	grab
Fecal Coliform	#/100mL	10		400	once/week	grab
Ammonia Nitrogen (summer) (winter)	mg/L	1 3.7		2.5 2.0	once/week	24 hr. composite
Temperature	°F	*		*	once/week	grab
Dissolved Oxygen	mg/L	*		*	once/week	grab
Total Phosphorus	mg/L	*		*	once/week	grab
Nitrate + Nitrite	mg/L	*		*	once/week	grab
Total Nitrogen	mg/L	*		*	once/week	grab
<u>Outfall #002</u> (Note 1)						
Flow	MGD	*		*	once/day	*****
Biochemical Oxygen Demand <sub>5</sub>	mg/L		45		once/discharge event	grab
Total Suspended Solids	mg/L		45		once/discharge event	grab
pH – Units	SU	****		****	once/discharge event	grab
Fecal Coliform	#/100mL	*		*	once/discharge event	grab
Ammonia Nitrogen	mg/L	*		*	once/discharge event	grab
Total Phosphorus	mg/L	*		*	once/discharge event	grab
Nitrate + Nitrite	mg/L	*		*	once/discharge event	grab
Total Nitrogen	mg/L	*		*	once/discharge event	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE _____. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 5 of 8	
					PERMIT NUMBER MO-0056260	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Downstream Monitoring</u> (DS-1 & DS-2)*****						
Flow	cfs	*		*	once/quarter	instantaneous estimate
Biochemical Oxygen Demand <sub>5</sub>	mg/L	*		*	once/quarter	grab
Dissolved Oxygen	mg/L	*		*	once/quarter	grab
Ammonia Nitrogen	mg/L	*		*	once/quarter	grab
Temperature	°F	*		*	once/quarter	grab
Total Phosphorus	mg/L	*		*	once/quarter	grab
Total Nitrogen	mg/L	*		*	once/quarter	grab
PH - Units	SU	****		****	once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE _____. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* Monitoring requirement only.
- \*\* Once each weekday means: Monday, Tuesday, Wednesday, Thursday and Friday.
- \*\*\* This facility is required to meet a removal efficiency of 85% or more.
- \*\*\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
- \*\*\*\*\* Instantaneous reading converted to report 24 hour average.
- \*\*\*\*\* DS-1 is Prairie Creek prior to confluence with Cowskin Creek. DS-2 is Cowskin Creek below confluence with Prairie Creek.

Note 1 – The interim effluent limitations of this permit contains a Total Residual Chlorine (TRC) limit.

- a. If the TRC limit in this permit is 0.01 mg/L or 0.2 mg/L, you must use an analytical method that has a quantification limit of no greater than 0.05 mg/L TRC. For reporting purposes on the discharge monitoring report (DMR), all analytical values below 0.05 mg/L shall be reported as “<quantlim.” All analytical values at or above the quantification limit of 0.05 mg/L shall be reported as the measured value. The permittee shall report the quantification limit in the remarks section of the DMR.

The average monthly effluent values for TRC will be determined by assuming that analytical results below the quantification limit are equivalent to 0 mg/L when calculating the monthly average.

The daily effluent value will be considered equal to 0 mg/L if it is below the quantification limit.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- b. If the TRC limit in this permit is 1.0 mg/L; you must use an analytical method with a quantification limit between 0.2 and 0.5 mg/L. All analytical values below the quantification limit shall be reported as "<quantlim." All analytical values at or above the quantification limit shall be reported as the analytical value.

The average monthly effluent values for TRC shall be determined by assuming that analytical results below the quantification limit are equivalent to 0.5 mg/L when calculating the monthly average.

The daily effluent value will be considered to be 0.5 mg/L if it is below the quantification limit.

- c. Disinfection is required year-round unless the permit specifically states that "Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31." If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.
- d. Do not chemically dechlorinate if it is not needed to meet the limits in your permit.
- e. If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as "0 mg/L" TRC.

Note 2 – Discharge shall occur only when flows exceed the design capacity of Outfall #001.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.



C. SPECIAL CONDITIONS (continued)

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
  - (1) One hundred micrograms per liter (100 µg/L);
  - (2) Two hundred micrograms per liter (200 µg/L) for acrylonitrile and acrylonitrile butadiene styrene; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and 2,4,6-trinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
  - (4) The level established by the state or federal government.
- (b) That they have begun or expect to begin manufacturing as an intermediate or final product or byproduct any toxic pollutant which is regulated in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
  - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
  - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
  - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
  - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
  - (5) There shall be no significant human health hazard from incidental contact with the water;
  - (6) There shall be no acute toxicity to livestock or wildlife watering;
  - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
  - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

C. SPECIAL CONDITIONS (continued)

8. The permittee shall submit a report semi-annually with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the City's collection system.

D. SCHEDULE OF COMPLIANCE

The permittee shall complete construction of new facilities and meet the final obligations of this permit by July 1, 2005.

DRAFT



Missouri Department of Natural Resource  
Water Pollution Control Program  
Planning Section

**Water Quality Review Sheet**  
**Determination of Effluent Limits**

**Facility Information**

FACILITY NAME: Ava WWTP NPDES #: MO-0056260

FACILITY TYPE/DESCRIPTION: Oxidation Ditch with filtration and Chlorine disinfection

ECOREGION: Ozark Highlands 8- DIGIT HUC: 11010003 COUNTY: Douglas  
Central Irregular Plains Osage Plains  
Mississippi Alluvial Plains Ozark Highlands

LEGAL DESCRIPTION: SW1/4, NE1/4, Sec.15, T26N, R16W LATITUDE/LONGITUDE: 36.9445/-92.6767

WATER QUALITY HISTORY: Effluent violation in late 1980s. Stream survey in 1990 indicate 0.1 miles polluted and 0.4 miles affected as a result of this discharge.

**Outfall Characteristics**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY	OTHER
001	1.085	Oxidation Ditch	Prairie Creek	
002	Variable	Stormwater Retention	Prairie Creek	

**Receiving Waterbody Information**

WATERBODY	CLASS	7Q10 (CFS)	*DESIGNATED USES	OTHER CHARACTERISTICS
Prairie Creek	U		None	Losing Stream
Cowskin Creek	P	0.2	AQL-GWWF, LWW	7Q10 Estimate-50 mi <sup>2</sup> area

\*Cool Water Fishery (CLF), Cold Water Fishery (CDF), Irrigation (IRR), Industrial (IND),  
Boating & Canoeing (BTG), Drinking Water Supply (DWS), Whole Body Contact Recreation (WBC),  
Protection of Warmwater Aquatic Life and Human Health (AQL), Livestock & Wildlife Watering (LWW)

COMMENTS: Prairie Creek is a losing tributary to Cowskin Creek. Outfall 001 is approximately 3.85 stream miles upstream of classified sections of Cowskin Creek.

**MIXING CONSIDERATIONS**

**Mixing Zone.** Prairie Creek is an unclassified receiving stream and is protected by acute criteria only. Mixing zone begins where Prairie Creek meets Cowskin Creek; Length =  $\frac{1}{4}$  mile, Volume of Flow =  $(0.25 \times 0.2 = 0.05 \text{ cfs})$ .

**Zone of Initial Dilution (Z.I.D.).** Not allowed where upstream 7Q10 flow is less than or equal to 0.1 cfs.

**Permit Limits And Information**

TMDL WATERSHED:  W.L.A. STUDY CONDUCTED:  DISINFECTION REQUIRED:  DISINFECTION WAIVER:   
(Y OR N) (Y OR N) (Y OR N) (Y, N, NA)

**OUTFALL# 001. Oxidation Ditch**WET TEST (Y OR N): ☐ N FREQUENCY: N/A A.E.C. N/A LIMIT: N/A

PARAMETER	MAXIMUM DAILY LIMIT	AVERAGE MONTHLY LIMIT	MONITORING FREQUENCY	SAMPLE TYPE
Flow	*	*	Daily	24 Hour Total
BOD <sub>5</sub> (mg/l)	15	10	Monthly	24-Hour Composite
TSS (mg/l)	20	15	Monthly	24-Hour Composite
pH (SU)	6-9		Monthly	Grab
Fecal Coliform (col./100 ml)	1000	400	Monthly	Grab
Ammonia Nitrogen (mg/l) -Summer-	5.1	2.5	Monthly	24-Hour Composite
Ammonia Nitrogen (mg/l) -Winter-	3.7	2.0	Monthly	24-Hour Composite
Temperature	*	*	Monthly	Grab
Dissolved Oxygen (mg/l)	*	*	Monthly	Grab
Total Phosphorus (mg/l)	*	*	Monthly	Grab
NO <sub>2</sub> + NO <sub>3</sub> (mg/l)	*	*	Monthly	Grab
Total Nitrogen (mg/l)	*	*	Monthly	Grab

\*MONITORING ONLY

TMDL WATERSHED: ☐ N W.L.A. STUDY CONDUCTED: ☐ N DISINFECTION REQUIRED: ☐ Y DISINFECTION WAIVER: ☐ N  
(Y OR N) (Y OR N) (Y OR N) (Y, N, NA)
**OUTFALL# 002. Stormwater Retention Pond**WET TEST (Y OR N): ☐ N FREQUENCY: N/A A.E.C. N/A LIMIT: N/A

PARAMETER	MAXIMUM DAILY LIMIT	AVERAGE MONTHLY LIMIT	MONITORING FREQUENCY	SAMPLE TYPE
Flow	*	*	1/event	instantaneous estimate
BOD <sub>5</sub> (mg/l)	45		1/event	grab
TSS (mg/l)	45		1/event	grab
pH (SU)	6-9		1/event	grab
Fecal Coliform (col./100 ml)	*	*	1/event	grab
Ammonia Nitrogen (mg/l)	*	*	1/event	grab
Total Phosphorus (mg/l)	*	*	1/event	grab
NO <sub>2</sub> + NO <sub>3</sub> (mg/l)	*	*	1/event	grab
Total Nitrogen (mg/l)	*	*	1/event	grab

\*Monitoring Only

**Receiving Water Monitoring Requirements****Site DS2.** Cowskin Creek below confluence with Prairie Creek

PARAMETER (S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Flow, BOD <sub>5</sub> , Dissolved Oxygen, Ammonia-Nitrogen, Kjeldahl Nitrogen, Temperature, pH, Total Phosphorus, Total Nitrogen	Quarterly	Grab	36.9373 / -92.7468 (Approximately)

## Derivation and Discussion of Limits

- ❖ **BOD<sub>5</sub>, TSS, pH, and Fecal Coliform.** Effluent regulations per 10 CSR 20-7.015(4) are protective of designated uses.
- ❖ **Ammonia-Nitrogen.** Due to seasonal differences in mass decay, winter limits are more restrictive than summer. Organic Nitrogen Hydrolysis Rate =  $0.1 \text{ }^{-1}\text{day}$ , and  $\text{NH}_3\text{-N}$  Oxidation Rate =  $1.8 \text{ }^{-1}\text{day}$ . Summer conditions; Temp.=26°C, pH=7.8. Winter Conditions; Temp.= 6°C, pH=7.8.

Summer			Winter		
CCC	=	1.0 mg/l	CCC	=	1.75 mg/l
W.L.A.	=	3.1 mg/l	W.L.A.	=	2.25 mg/l
C.V.	=	0.6	C.V.	=	0.6
M.D.L.	=	5.1 mg/l	M.D.L.	=	3.7 mg/l
A.M.L.	=	2.5 mg/l	A.M.L.	=	2.0 mg/l

Note: When field data become available, effluent limits and/or stream monitoring location and frequency may be adjusted.

Reviewer: Chris Zell

Date: 02/15/02

Unit Chief: Mohsen Dkhili